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Tree Pest Leaflets
THE SATIN MOTH

Stilpnotia salicis (L.)

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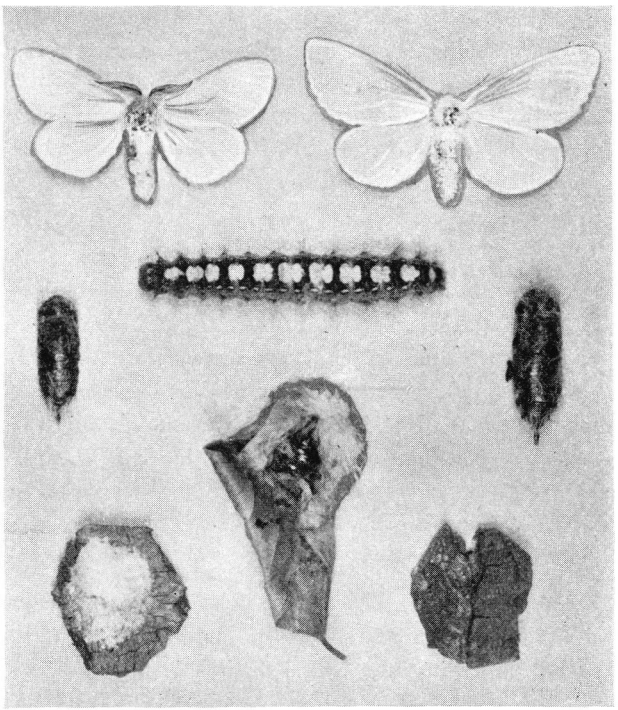

The satin moth (**Stilpnotia salicis** (L.)): Adults, pupae, larva, egg cluster, cocoon, and hibernation web on bark.

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THE SATIN MOTH

Stilpnotia salicis (L.)

History and Distribution: — The satin moth, a native of Europe and Asia, was first discovered in the United States in 1920 a few miles north of Boston, Mass. It was found during the same year in British Columbia, Canada, and in 1922 in the State of Washington. The insect is now distributed over nearly all the southern half of New England and has spread into the Maritime Provinces of Canada. It occurs in northwestern Oregon, throughout that part of Washington west of the Cascade Range, and into British Columbia. Serious defoliation has occurred in New England from time to time, particularly on poplars in ornamental plantings. Only once has it been observed in outbreak form in woodland areas.

Host Trees: — The caterpillars, or larvae, of the satin moth will feed on most species of poplar and willow. In New England the Lombardy poplar (*Populus nigra* var. *italica* DuRoi.) is perhaps most commonly attacked although the Carolina poplar, or cottonwood (*P. deltoides* Marsh.), bigtooth aspen (*P. grandidentata* Michx.), quaking aspen (*P. tremuloides* Michx.), white poplar (*P. alba* L.), balm-of-Gilead (*P. balsamifera candicans* (Ait.) (Gray)), and the golden willow (*Salix alba* var. *vitellina* (L.) (Koch.) must be considered as favored foodplants. In the State of Washington northern black cottonwood (*P. trichocarpa hastata* (Dode) Henry), Scouler willow (*S. scouleriana* Barr.), and the Pacific willow (*S. lasiandra* Benth.), are also recorded as favored foodplants.

Symptoms of Damage: — The young larvae feed only on the epidermis of the leaf and are more often found on the underside. In heavy infestations this type of feeding may cause the leaves to turn brown and fall prematurely. Partly grown larvae eat small, irregular holes in the leaf while full-grown larvae devour the entire leaf excepting the large veins. Repeated defoliation undoubtedly injures healthy trees and may cause the death of those in a weakened condition. The satin moth is a pest, however, primarily because of the unsightly appearance of ornamental and shade trees that have been defoliated by the larvae, and because the larvae often cause considerable annoyance by crawling over everything near the infested trees, and some people suffer irritation from the hairs of the caterpillars.

Description: — The wings of both male and female moths are pure white with a satinlike luster. Wing expanse is from 1½ to 2 inches. The head, thorax, and abdomen are black, but are so densely covered with long white hairs that the body appears white unless these hairs have been removed. The eggs are laid in small oval-shaped patches about five-eighths inch long and one-half inch wide which are covered with a glistening-white secretion.

The average sized cluster has about 300 eggs, although the number in individual clusters may range from 100 to 1,000. Eggs are usually deposited on the trunks, underside of branches, or on leaves of the host trees, but they may also be found on nearby objects. Frequently they are deposited on electric light poles where the adults are attracted by lights at night. The young larvae spin tough, compact hibernation webs, usually under loose pieces of bark or in crevices or abrasions on the bark. These hibernation webs are very inconspicuous because of their striking resemblance to the bark. The full-grown larva is about 1⅜ inches long. The head is black with a bluish tinge. The body is black on the upper side with a row of large white blotches down the middle. The sides of the body are mottled with black and white, and each segment bears a transverse row of reddish-brown tubercles from which arise yellowish-brown hairs. The pupa, which is about ⅞ inch long, is shining black and covered with long white and golden hairs. The cocoon is loosely constructed, and the pupa within is clearly visible.

Life History: — In New England the moths emerge during the latter part of June and the first part of July. Egg deposition occurs during July and is at a maximum about the middle of the month. The eggs hatch in about 2 weeks, and the young larvae feed about 10 to 12 days and then spin the hibernation webs in which they spend the winter. They begin to emerge from hibernation the latter part of April and then feed actively until they become full-grown in June. In parts of Europe and the Orient the satin moth has two generations a year, but in North America there is only one generation.

Means of Spread: — Adults of both sexes are strong flyers and by this means may become rather rapidly distributed over an area. This insect may also be transported on poplars or willows while the small larvae are in the hibernation webs.

Natural Control: — Native parasites have been of little importance in the control of the satin moth in New England. At about the time the insect was discovered here it was found that certain species of introduced parasites which had already become established where there were infestations of the gypsy moth and brown-tail moth were attacking the satin moth as well. Later, other parasites were imported from Europe and some of these have become established both in New England and in the Pacific Northwest. Apparently these European parasites have been of considerable value in both regions. In addition to these natural insect enemies, birds, low winter temperatures, and disease have played a part in the natural control of the insect in this country.

Artificial Control: — The satin moth can be controlled effectively by spraying with lead arsenate in the proportion of 5 pounds per 100 gallons of water with fish oil or linseed oil added in the proportion of 4 fluid ounces

to each pound of lead arsenate. It has been found that one spraying will control two generations of the satin moth, for if infested trees are treated in May or June to control the larvae of one generation a sufficient amount of insecticide will remain on the foliage to kill any young larvae of the next generation that may be present later in the summer.

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